

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 10/752,709 Confirmation No. : 5556  
First Named Inventor : John H. HAYES  
Filed : January 8, 2004  
TC/A.U. : 3673  
Examiner : Fredrick C. Conley  
  
Docket No. : 010628.50474C3  
Customer No. : 23911  
  
Title : Mattress and Bedpan Cushion System Using an Air Pressure Switch and Reservoir

**APPEAL BRIEF**

**Mail Stop Appeal Brief- Patents**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

On January 10, 2008, Appellant appealed to the Board of Patent Appeals from the final rejection of claims 1-8. The following is Appellant's Appeal Brief submitted pursuant to 37 C.F.R. § 1.192. **An extension of the deadline is respectfully requested and the appropriate fee is submitted herewith.**

**I. REAL PARTY IN INTEREST**

The real party in interest is the inventor, John H. Hayes.

**II. RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences.

**III. STATUS OF CLAIMS**

Claims 1-8 are pending in the application, of which claims 1-8 stand rejected and are the subject of this appeal.

**IV. STATUS OF AMENDMENTS**

None.

**V. SUMMARY OF CLAIMED SUBJECT MATTER**

Appellant's invention is directed toward a mattress system comprising a mattress, a cavity arranged in the mattress, an expandable cushion arranged in the cavity, a mattress protector covering at least the top surface of the mattress, and a control system operatively coupled with the expandable cushion to control an expansion and contraction of the cushion (see ¶¶s 0007 and 0009).

Below, Appellant has annotated independent claim 1 to reference the drawings and specification.

1. A mattress system (Figs. 1-3 and 14), comprising:
  - a mattress (14) having a top surface and a bottom surface;
  - a cavity (17) arranged in the mattress, the cavity being open at the top surface and having a defined size (see Fig. 3);
  - an expandable cushion (16) arranged in the cavity (17);
  - a mattress protector (20) covering at least the top surface of the mattress, the protector including a first portion (25) that extends into the cavity and a second portion (26) that extends

over the expandable cushion (16) arranged in the cavity (see Figs. 4 and 5a); and

a control system (62, Fig. 14) operatively coupled with the cushion (16) to control an expansion and contraction of the cushion in order to maintain a cushion pressure in accordance with a weight of a user in proportion to a firmness of the mattress ([0009] and [0051], p. 4, lines 11-15; p. 15, lines 17-21),

wherein the control system includes a fluidic pump (61) arranged to pump fluid into the expandable cushion, a fluid relief mechanism (64) arranged to allow fluid to escape the expandable cushion, and a fluid pressure switch (66) operable to automatically maintain a defined pressure level in the expandable cushion ([0051]).

Appellant's invention thus provides a mattress system, which allows for the careful placement of a bed pan directly under a person with minimal movement of the person, minimum physical exertion of the attendant, while at the same time providing a comfortable mattress by maintaining the cushion pressure based on a weight of a user in proportion with the mattress firmness when a bed pan is not being used (see ¶¶s 6 and 46, in particular p. 14, lines 9-17).

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

1. Are claims 1-3, 5 and 7-8 obvious under 35 U.S.C. §103(a) over US 4,947,500 issued to Seiler in view of US 6,253,401 issued to Boyd?
  
2. Are claims 4 and 6 obvious over US 4,947,500 issued to Seiler in view of US 6,253,401 issued to Boyd and further in view of US 4,867,140 issued to Hovis et al.?

## **VII. ARGUMENT**

Appellant will address independent claims 1 and 8 separately. Dependent claims 2-7 will stand or fall with independent claim 1. Hence, Appellant will only address on the merits the first ground of rejection set forth above as to whether independent claims 1 and 8 are obvious over Seiler in view of Boyd.

### **A. Independent Claim 1**

Appellant's independent claim 1 recites a mattress system comprising a mattress, a cavity arranged in the mattress, and an expandable cushion arranged in the cavity. In pertinent part, a control system operatively coupled with the cushion controls an expansion and contraction of the cushion in order to maintain a cushion pressure in accordance with a weight of a user in proportion to a firmness of the mattress. The control system includes a fluidic pump, a fluid relief mechanism and a fluid pressure switch operable to automatically maintain a defined pressure level in the expandable cushion. Finally, the mattress system includes a mattress protector having a first portion that extends into the cavity and a second portion that extends over the expandable cushion arranged in the cavity.

Appellant's mattress system thus advantageously provides a control system, utilizing a pump, fluid relief mechanism and fluid pressure switch to expand and contract the cushion in order to maintain a cushion pressure in accordance with a weight of a user in proportion to a firmness of the mattress

(see, for example, ¶¶s 9, 46 and 51). This provides a comfortable mattress when the bed pan is not in use.

Moreover, the first and second portions 25, 26 of the mattress protector 20 (see Fig. 5a and 18, for example), advantageously contain, within the mattress protector, any spills or leaks that may occur from use of the bed pan (see ¶ 39).

Appellant respectfully submits that a *prima facie* case of obviousness has not been made. One skilled in the art would not combine Seiler and Boyd in the manner fashioned by the Examiner and, even if one were to do so, such a combination would not meet Appellant's claimed invention.

### **1. The “control system” limitations**

Seiler fails to disclose a control system as recited in Appellant's claim 1. Seiler merely shows a control device 17, in block diagram form, coupled to a pump 18 (see Figs. 1 and 2). Seiler generally states that valves may serve the purpose of inflating and deflating air-cushion groups (see col. 3, line 66 – col. 4, line 2). However, Seiler neither describes nor even illustrates such valves.

Appellant's “control system” requires not only a fluidic pump, but also a fluid relief mechanism and a fluid pressure switch, wherein the control system controls the expansion and contraction of the cushion in order to maintain a cushion pressure in accordance with a weight of a user in proportion to a firmness of the mattress. Seiler does not describe or suggest such a control system, nor does Seiler utilize a fluid pressure switch and fluid relief

mechanism. In that regard, the generic “valves” recited in Seiler are not a fluid pressure switch as recited in Appellant’s claim 1.

More importantly, Seiler’s control device does not maintain a cushion pressure in accordance with a weight of a user in proportion to a firmness of the mattress. Indeed, Seiler *teaches away* from such a control system since it is Seiler’s intent to continually cycle air pressure in the various cushion groups in order to move or “push” the patient into different positions to reduce stress due to body weight and to prevent decubitus ulcers (see col. 2, lines 35-41 and col. 4, lines 33-38).

Seiler therefore teaches away from maintaining a cushion pressure based on a weight of a user in proportion to a firmness of the mattress material. In fact, any attempt to replicate Appellant’s invention in Seiler would destroy the function and purpose of Seiler’s device, merely resulting in a conventional mattress. Seiler provides cushion pressure which “disturbs” the patient in order to intentionally push the patient into different positions. Hence, Seiler’s cushion pressure is generally unrelated to the surrounding mattress material.

Quoting from the final Office Action of October 16, 2007, the Examiner states that Seiler fails to disclose “the control system maintaining the pressure within the cushion” (see p. 3, lines 3-4). That passage, however, is not what Appellant claimed. Appellant claimed a control system operatively coupled with the cushion “to control an expansion and contraction of the cushion in order to

maintain a cushion pressure in accordance with a weight of a user in proportion to a firmness of the mattress" (emphasis added). Reading Appellant's claim 1 properly, it is clear that Seiler's "therapeutic" mattress is designed to do no such thing, and indeed to do exactly the opposite thereof. Hence, any modification of Seiler based on the Boyd reference cited by the Examiner would destroy the function and purpose of Seiler's invention.

After failing to properly address Appellant's claimed language, the final Office Action cites to Boyd for allegedly meeting the claimed language since it describes a control system that maintains pressure within a cushion. As noted above, however, "maintaining pressure within a cushion" is not what Appellant claimed.

While Boyd discloses an air mattress system having various chambers and a display of the chamber pressure, Boyd is wholly unrelated to Appellant's control system, which maintains a cushion pressure in accordance with a weight of a user in proportion to a firmness of the mattress. Boyd merely describes a simple air mattress composed of multiple chambers, wherein the pressure can vary from chamber to chamber. One skilled in the art does not reach Appellant's invention even if Boyd's control system was used in Seiler. That is because Seiler's system would still operate as designed, that is, to "disturb" or "push" a patient around via use of the air cushions. No where is there any reference to maintaining a cushion pressure in accordance with a weight of a user and in proportion to a firmness of the mattress discussed in Boyd.

Appellant's invention has a completely different purpose from both Seiler and Boyd. That is, Appellant utilizes a mattress having a cavity to allow for easy use and disposal of a bed pan. However, when the bed pan is not in use, the expandable cushion is utilized to represent the firmness of a mattress by properly controlling the expansion and contraction thereof in accordance with a weight of a user in proportion to the firmness of the mattress. Thus, the user achieves both a comfortable mattress under normal use as well as an improved bed pan system from that known in the art. The rationale provided by the Examiner for combining Boyd with Seiler — "to conveniently maintain desired pressures" — does not meet Appellant's claim language. In fact, it just would provide Seiler with a "convenient" way to vary the pressures so as to "move" or "disturb" the patient.

## **2. The "mattress protector" limitations**

Appellant's claim 1 also recites a mattress protector for a mattress having an open cavity therein. Thus, Appellant's claimed mattress system includes separate components — the mattress and the mattress protector. The mattress protector 20 includes a first portion 25 that extends into the cavity and a second portion 26 that extends over the expandable cushion 16 arranged in the cavity.

In contrast, Seiler discloses a mattress formed of a base layer 1, an elastic frame layer 2, 3, and a cover layer 20. As is clear from Seiler, these components form the mattress itself — not a mattress and a mattress protector. Indeed,

Seiler discloses that these components are mutually glued together, thus forming the mattress (col. 3, lines 11-15 and 46-48). Seiler does disclose a fabric cover 21, which would be akin to a mattress protector (col. 3, lines 63-65). That protector 21, however, does not meet Appellant's claimed limitations.

Since Seiler's components form the mattress itself, and because the cover layer component 20 extends over the entire upper surface, the so-called "core" in Seiler that allegedly corresponds to Appellant's claimed "cavity" is not open at the top surface as is required by Appellant's independent claim 1.

One skilled in the art would not consider Seiler's cover 20 a "mattress protector" as recited in Appellant's claim 1. Rather, it is simply part of the mattress itself. Seiler recognizes this by also disclosing a protective cover 21. Stated more generally, Appellant's invention is directed toward a mattress system that allows for a bed pan to be raised and lowered into a cavity formed in the mattress. To do so, the cavity must be opened at the upper surface of the mattress. In contrast, Seiler is directed toward the cycling of pressure into air cushions arranged within a core of the mattress so as to cause movement of a patient arranged on the cover layer 20 of the mattress.

As discussed above with respect to the control system limitations, Appellant's invention and Seiler are directed to two completely different objectives, and as such the Examiner's equating of Seiler's components with those recited in Appellant's claim 1 imparts an improper interpretation to

Appellant's claim language. One skilled in this art would not consider Seiler's cover layer 20 to be the claimed "mattress protector". Rather, one skilled in the art would consider it as part of the mattress 20, just as described in Seiler as forming a unitary whole mattress (col. 3, line 48).

**B. Independent Claim 8**

Appellant's independent claim 8 recites a mattress system as in claim 1, but without the feature of the mattress protector discussed above. Hence, for the same reasons set forth above with respect to claim 1 regarding the control system limitations, Appellant submits claim 8 is patentable over Seiler in view of Boyd.

**VIII. CONCLUSION**

In view of the foregoing, Appellant respectfully submits claims 1-8 are patentable over the art of record and a reversal of the final Office Action is warranted.

Serial No. 10/752,709  
Appeal Brief dated: April 10, 2008  
Attorney Docket No. 010628.50474C3

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #010628.50474C3).

Respectfully submitted,

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Jeffrey D. Sanok  
Registration No. 32,169

CROWELL & MORING LLP  
Intellectual Property Group  
P.O. Box 14300  
Washington, DC 20044-4300  
Telephone No.: (202) 624-2500  
Facsimile No.: (202) 628-8844  
JDS:pct

## CLAIMS APPENDIX

The following claims are the subject of this appeal.

1. A mattress system, comprising:

a mattress having a top surface and a bottom surface;

a cavity arranged in the mattress, the cavity being open at the top surface and having a defined size;

an expandable cushion arranged in the cavity;

a mattress protector covering at least the top surface of the mattress, the protector including a first portion that extends into the cavity and a second portion that extends over the expandable cushion arranged in the cavity; and

a control system operatively coupled with the cushion to control an expansion and contraction of the cushion in order to maintain a cushion pressure in accordance with a weight of a user in proportion to a firmness of the mattress, wherein the control system includes a fluidic pump arranged to pump fluid into the expandable cushion, a fluid relief mechanism arranged to allow fluid to escape the expandable cushion, and a fluid pressure switch operable to automatically maintain a defined pressure level in the expandable cushion.

2. The system according to claim 1, wherein the fluid is air, and wherein a control switch is provided to control an inflation and deflation of the expandable cushion.

3. The system according to claim 2, wherein the control switch is an electric control switch.

4. The system according to claim 1, further comprising a fluid pressure reservoir operatively coupled with the control system.

5. The system according to claim 1, wherein the fluid is air.

6. The system according to claim 1, wherein the fluid is a liquid.

7. The system according to claim 1, wherein the fluid relief mechanism allows the fluid to escape the expandable cushion to maintain the defined pressure level.

8. A mattress system, comprising:

a mattress having a top surface and a bottom surface and a defined firmness;

a cavity arranged in the mattress;

an expandable cushion arranged in the cavity; and

a control system operatively coupled with the cushion to control an expansion and contraction of the cushion in order to maintain a cushion pressure in accordance with a weight of a user in proportion to the firmness of the mattress,

wherein the control system includes a fluidic pump arranged to pump fluid into the expandable cushion, a fluid relief mechanism arranged to allow fluid to escape the expandable cushion, and a fluid pressure switch operable to automatically maintain a defined pressure level in the expandable cushion.

## **EVIDENCE APPENDIX**

None.

**RELATED PROCEEDINGS APPENDIX**

None.